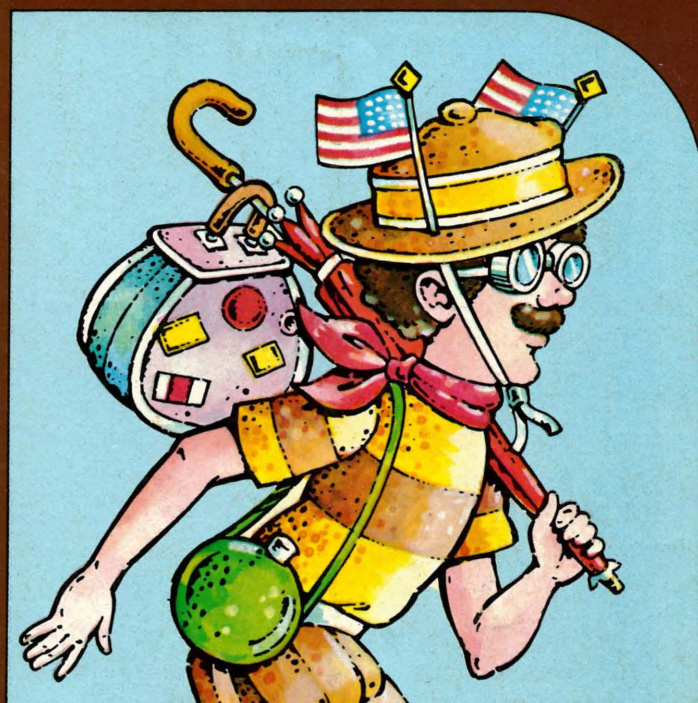


321 CONTACT

A Visit to a Chocolate Factory!



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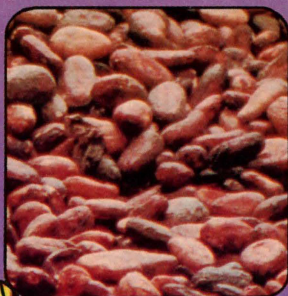


Something's Fishy

No, this is not a Halloween mask. It's a strange-looking coral reef creature called a scorpion fish. Scorpion fish look like this so they can blend in with the rocky coral scenery on a reef.

There are many other strange and wonderful animals that live on reefs. For a look at some of them, turn to page 16. And then, check out *Earth Works* for more information on coral reefs themselves.

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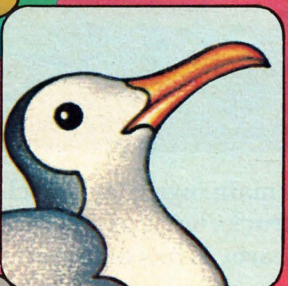
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THE GREAT AMERICAN

by Pat Berry

What's the best thing to have waiting for you inside when it's cold and windy outside? How about a steaming mug of hot chocolate? Mmmm!

Imagine a town filled with that delicious chocolate smell 365 days a year. You must be in Hershey, Pennsylvania, the home of one of the biggest chocolate factories in America. Cocoa, milk chocolate and lots of other chocolatey goodies are made here.

Today chocolate is made with the same ingredients Milton Hershey used when he started making his candy bars in 1905. The machinery is more modern, though. And there's been a big change in the price. The nickel chocolate bar is definitely a thing of the past.

Ray Brace is the plant manager at the Hershey factory. It's his job to make sure everything is running smoothly, especially the chocolate.

The factory is made up of huge rooms filled with machinery. Many rooms are as big as football fields, says Ray. And each room completes a step in the chocolate-making process.

Beans from Trees

The most important ingredient for making chocolate grows thousands of miles away from the factory. It's the cocoa bean. The cocoa tree grows near the equator in Africa and South America.

Workers cut down pods from the cocoa trees and open them with long knives. The beans inside are white until they meet with the air. Then they turn brown over several days. The beans are left to dry in the sun for about a week. Then ships bring the beans to the United States. Trains carry them to Hershey where they are stored in silos.

In the factory, the beans are blended by a secret formula. This way, the chocolate flavor stays the same from batch to batch.



Above: One of the main ingredients in chocolate is milk. Each day trucks bring over a half million quarts from nearby farms to the factory.

The beans are roasted using very hot air. Then they enter chambers where they are broken up. The shells are removed. All that is left of each bean is the soft center, called the *nib*.

Next, the nibs are crushed in a special mill. When that happens, they turn into a liquid called *chocolate liquor*. (Despite its name, chocolate liquor has no alcohol!)

Why did the nibs become liquid? Because each bean is loaded with *cocoa butter*. This creamy liquid is a very important ingredient in chocolate making. The

CHOCOLATE FACTORY

butter is what makes chocolate so smooth. When making chocolate candy, extra cocoa butter is added to the chocolate liquor.

Holy Cow!

Another important ingredient in chocolate making is milk. Hershey, Pennsylvania, is the perfect spot for a chocolate factory. Trucks bring in over half a million quarts (475,000 l) of milk every morning from nearby farms. That's milk from about 50,000 cows!

When the milk comes to the factory, a lot of the water in it is boiled away. It's also sweetened with sugar, until the mixture becomes thick and gooey like taffy.

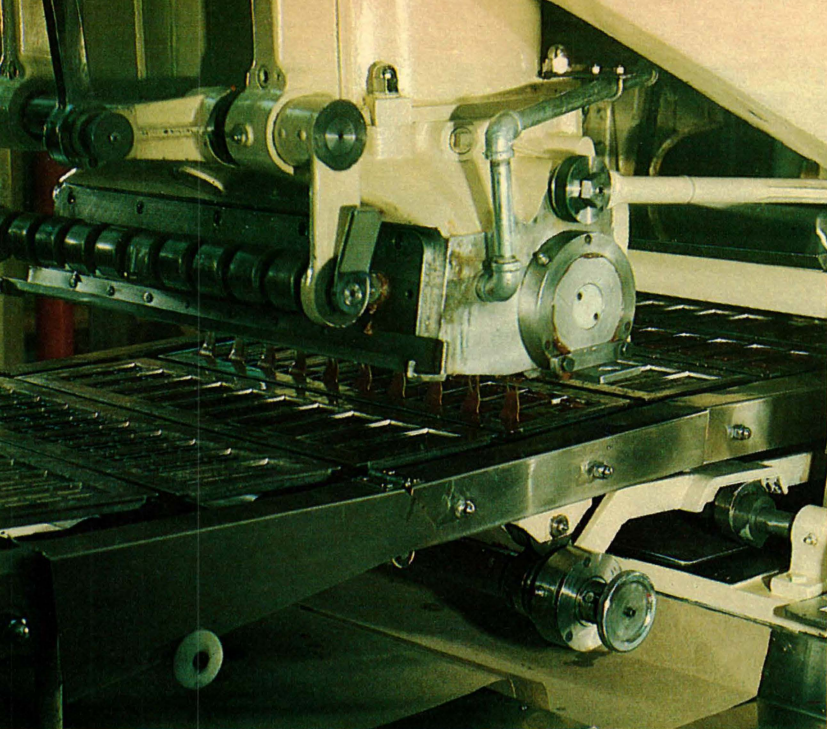
Here's where the chocolate liquor and the milk mixture come together to make milk chocolate. As you might expect, Hershey keeps its candy-making recipe under wraps.

"We also have equipment that makes our chocolate flavor and texture special to ➡



Above: Cocoa beans are the most important part of chocolate. These beans grow in Africa and South America. They traveled thousands of miles to Hershey to be crushed and made into chocolate.

Left: This huge tub can hold 50 tons of chocolate. Here the chocolate is being pressed against the tub's hard bottom to remove lumps.



Above: Once the chocolate is mixed, it's time to make bars of candy. This machine pours liquid chocolate into bar-sized molds.

Hershey," says Ray. "But I can't explain how it works. That part's a secret, too."

Smoothing Out the Lumps

After mixing comes refining. Very large steel rollers begin pressing out lumps in the

mixture. Next is *conching*—one of the most important steps in the whole process.

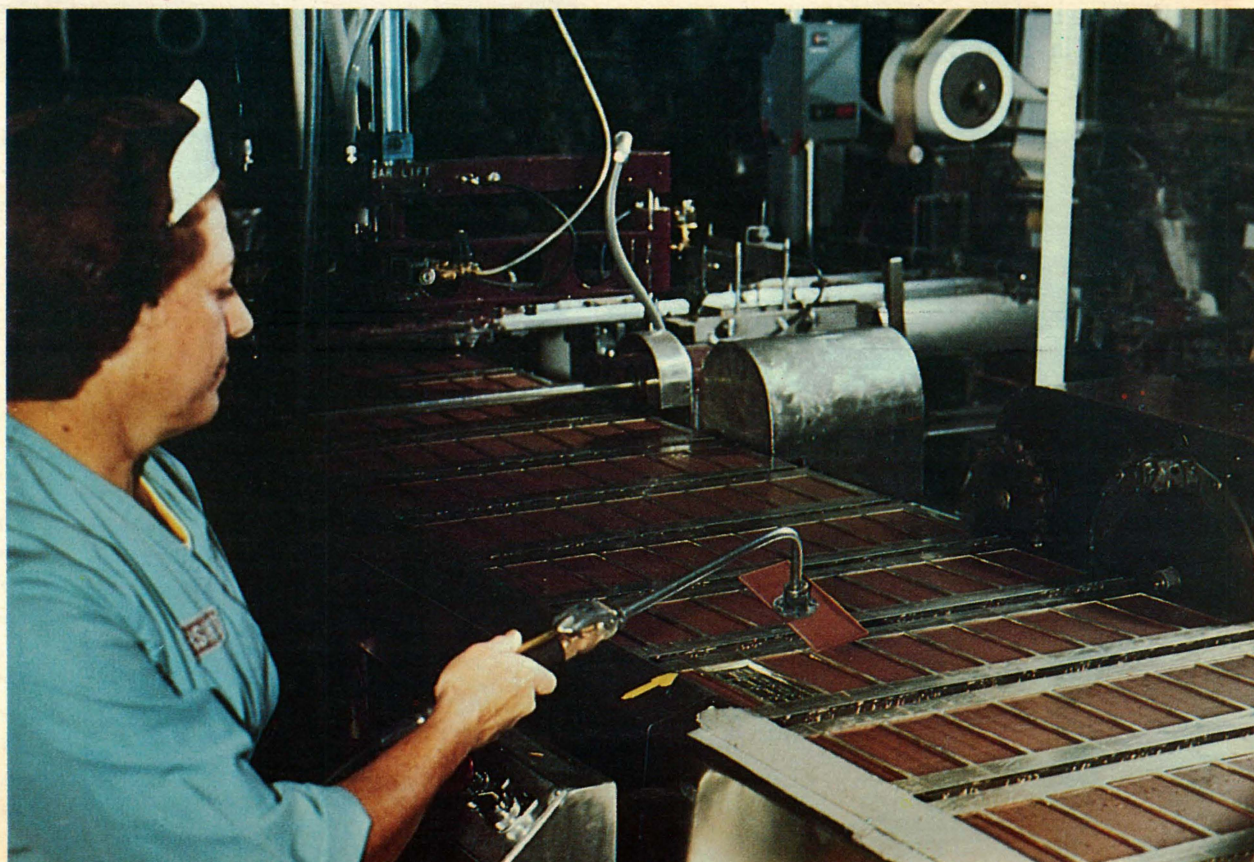
The chocolate is poured into huge tubs. They hold up to 100,000 pounds (45,630 kg) of chocolate paste at a time. The surface of each tub is made of granite, a rough stone. Rollers of the same material rub the chocolate against the surface. The friction from all that chocolate rubbing causes a lot of heat. The workers say that the conching room gets so hot from the chocolate, they don't need to heat the room. The friction helps make the chocolate very smooth. It takes three days of conching for milk chocolate to pass the Hershey smoothness and flavor test!

After conching, the milk chocolate is refined one last time to make extra sure that all the lumps are gone. Then it is cooled in a holding tank.

Belting Out the Bars

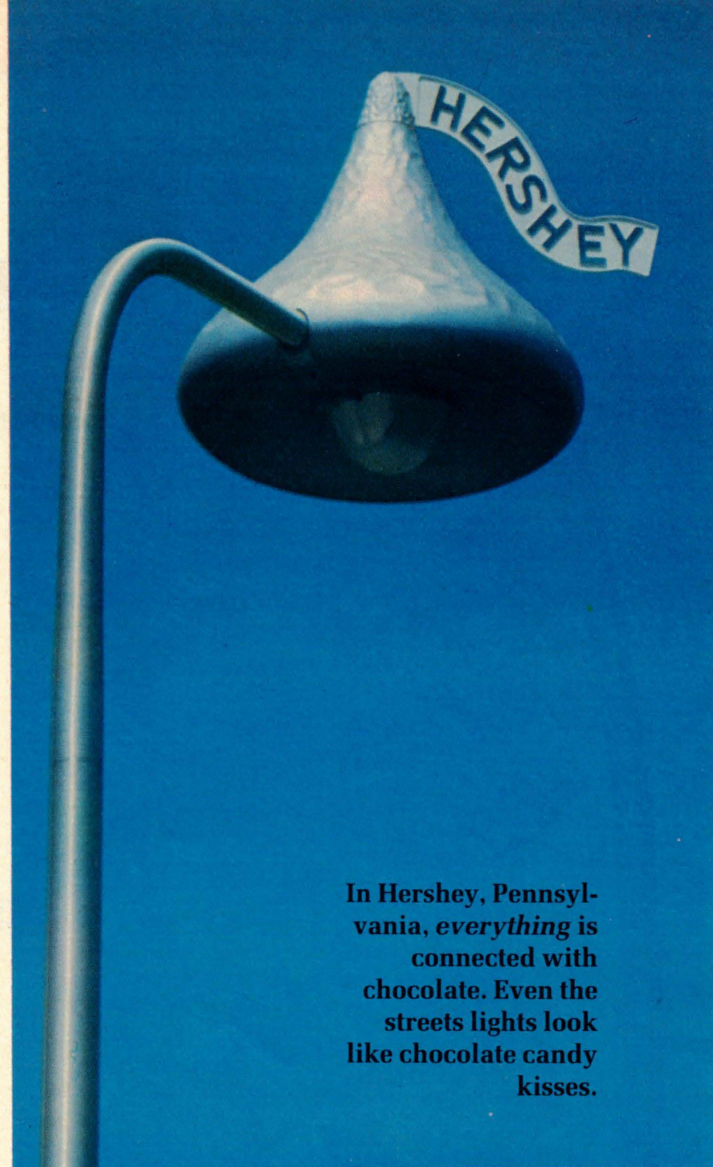
The refined liquid chocolate enters one of several depositing machines which hang over a conveyor belt. Moving along on these belts are molds. Each one has 12 individual bar molds with the Hershey name printed in reverse on the bottom. The depositer fills

Right: When the candy bars harden, inspectors look for cracks or bubbles. Imperfect bars are removed by a special tool. Some are melted down and used again. Others are eaten by Hershey workers.





After the chocolate is mixed and the bars are molded, a machine covers the candy in Hershey wrappers. Each machine wraps 130 a minute.



In Hershey, Pennsylvania, *everything* is connected with chocolate. Even the streets lights look like chocolate candy kisses.

each mold with chocolate. One machine can make as many as 720 chocolate bars a minute.

The conveyor belt takes the chocolate-filled molds for a rough ride inside a cooling tunnel. As the conveyor shakes, the chocolate in each mold levels out. The vibrations also shake out air bubbles that are in the chocolate. The bars are then cooled some more to make them solid.

Chief Chocolate Inspector

Still on the conveyor belt, the bars come out of the refrigerated tunnel and pass by an inspector. She is watching to make sure that no defective bar gets by her. She pulls out chocolate with marks or cracks and drops it into a bin with other marked bars. None of the chocolate is wasted, though. Most imperfect candy will be melted and poured into molds again.

After the chocolate is inspected, a wrap-

ping machine wraps every candy bar with inner and outer wrappers. Each machine can wrap 130 bars a minute. One molding line will make about one million chocolate bars in a day. And there are several molding machines. That's millions and millions of chocolate bars!

For people who visit the town of Hershey, there's Hershey's Chocolate World. That's a place where you can learn all about chocolate and how it's made by riding through a model factory. You can even see live cocoa trees. Sometimes the people there ask visitors to sample a new product, like their newest candy bar. That way they can get an idea how much the people who buy the candy are going to like it.

Do people in Hershey ever get sick of being surrounded by all that chocolate? Would you?

Factoids

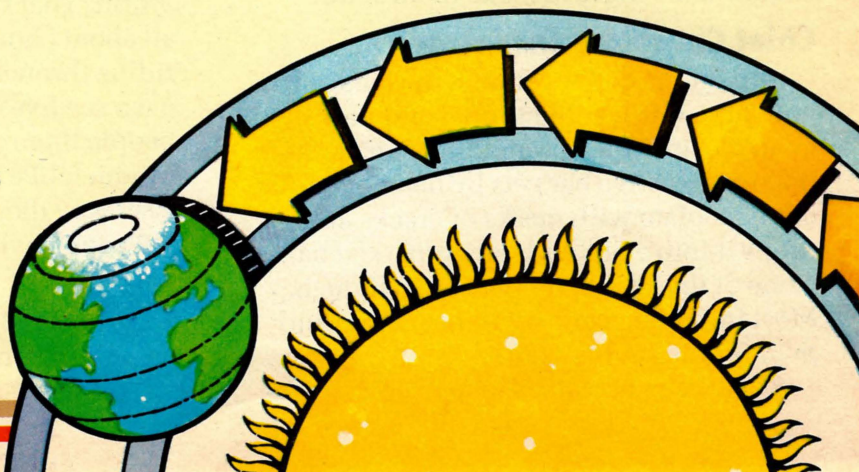


The longest trip ever made on roller skates was by Theodore J. Coombs. He traveled 5,193 miles from Los Angeles to New York City to Yates Center, Kansas, in 1979.



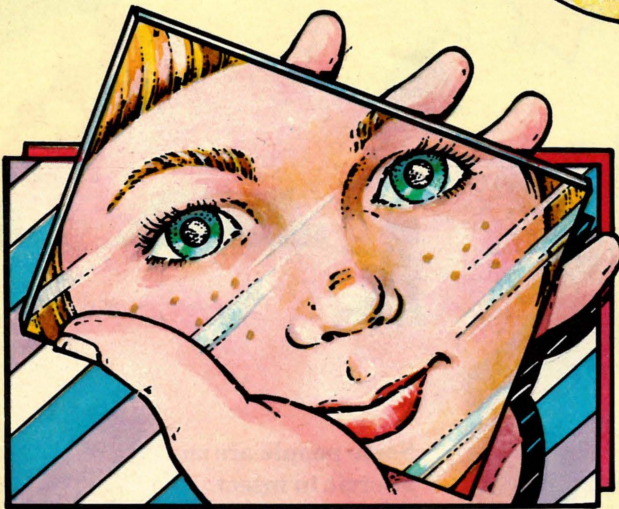
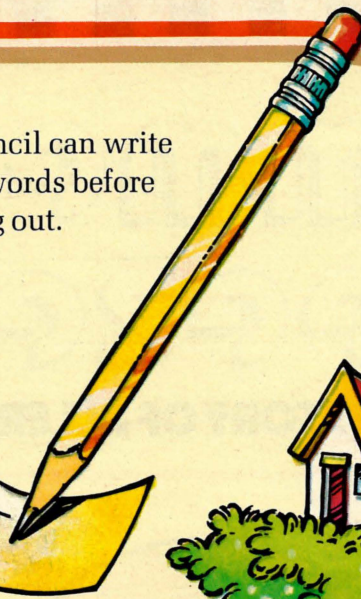
A woodpecker pounds its bill against a tree about 20 times a second.

The earth travels $18\frac{1}{2}$ miles every second in its orbit around the sun.

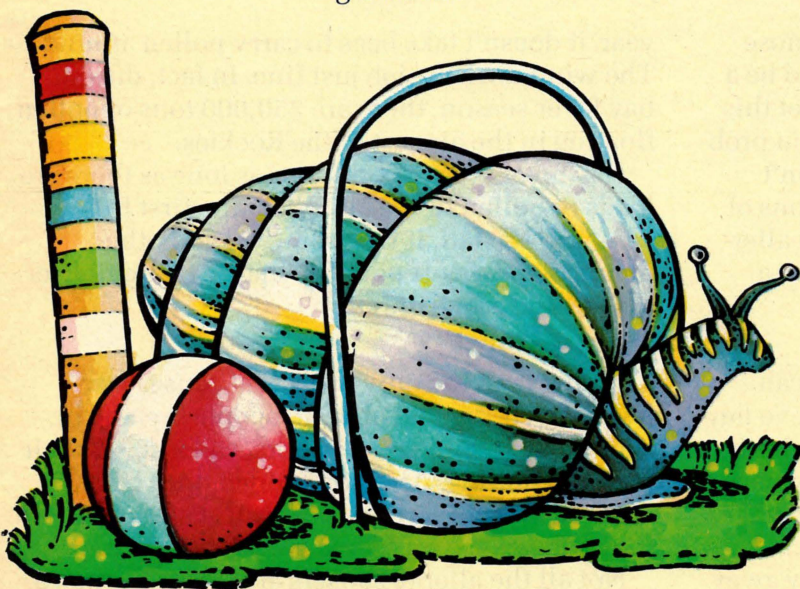


AN ORDINARY PENCIL CAN WRITE
50,000 WORDS BEFORE
RUNNING OUT.

An ordinary pencil can write
about 50,000 words before
running out.



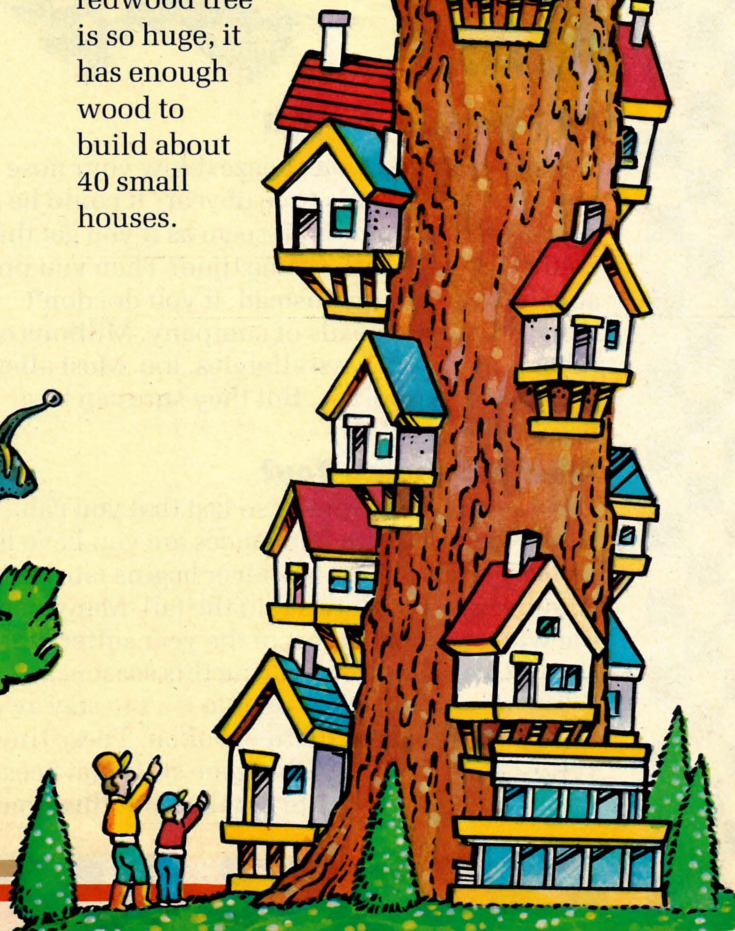
Each of your eyelashes lasts for about five
months. Then it falls out and a new one
grows in.



The largest snail in the world is the African
giant snail, which grows to be eight inches long
or more, about the size of a kid's sneaker.

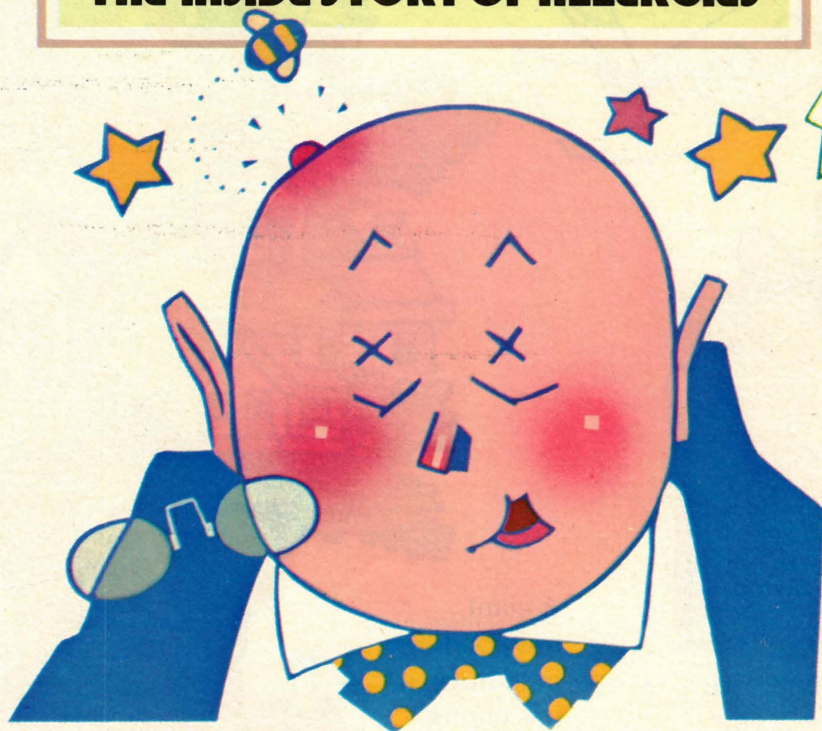


A giant
redwood tree
is so huge, it
has enough
wood to
build about
40 small
houses.

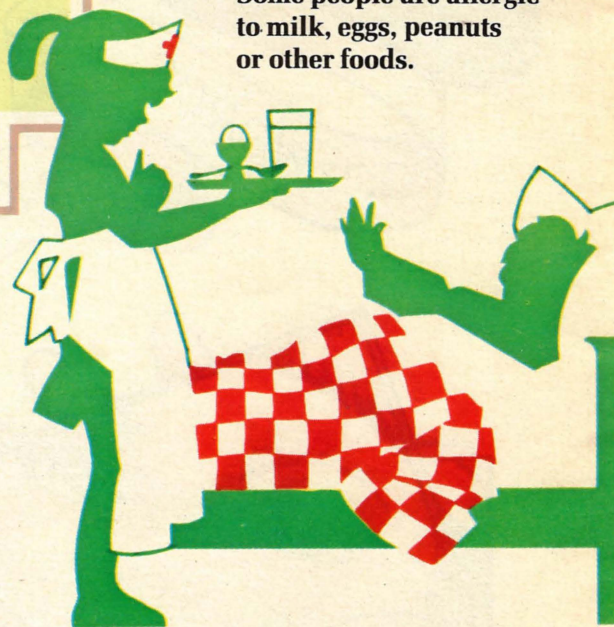


Summer Sneezes

THE INSIDE STORY OF ALLERGIES



Some people are allergic to milk, eggs, peanuts or other foods.



Some people are so allergic to insect bites or stings that they can get really sick from them.

by Diane G. Smith

What can make you sneeze, blow your nose and wheeze a lot this time of year? It could be a summer cold. But does it seem as if you get this cold every year at the same time? Then you probably have an allergy instead. If you do, don't worry. You have loads of company. Millions of other Americans have allergies, too. Most allergies aren't too serious. But they sure can be a pain in the nose!

What's Dugging You?

If your nose is running so fast that you can barely keep up with it, chances are you have hay fever. The season for hay fever begins late in the summer and continues into the fall. Many people who are fine the rest of the year suffer what seems like a long cold during this season.

The answer for these people isn't to stay away from hay. The real villain is *pollen*. These tiny yellow bits of dust are the same stuff that bees carry from one flower to another. But this time of

year, it doesn't take bees to carry pollen around. The wind does the job just fine. In fact, during hay fever season, there are 250,000 tons of pollen floating in the air east of the Rockies.

Hay fever season continues as long as there are loads of pollen in the air. When the first frost comes in the fall, it kills ragweed and other plants that give off pollen. Finally, allergy sufferers breathe a sigh of relief!

More Allergies

Pollen isn't the only thing that causes hay fever. Anything that allergic people breathe in, such as dust, molds or feathers, can also set their noses twitching. And don't forget dogs and cats, either. Their saliva and the small scales of skin they shed cause problems for some folks, too.

Not all the allergy causers are floating around. Some stuff that people take into their mouths can cause allergies, too. That includes medicines for some people and even, gulp, food! Milk, eggs

and peanuts are high on the list of allergy-causing foods. For allergic folks, these foods can cause stomach aches, rashes or hives.

Food allergies are a real drag. You might not mind skipping a glass of milk. But it's no fun to avoid something tasty like chocolate. If you do have a food allergy, cheer up. You may well outgrow it. Kids often do that.

There's one other allergy that almost everyone knows about—poison ivy. You probably didn't know that this common summer problem is really an allergy. About half the people in the United States will get itchy, runny blisters if they touch this plant or its sap. Of course that means a lot of other people aren't bothered by poison ivy. But who wants to get close enough to find out?

When the Body Goes Bananas

Now you know what causes allergies. But what's going on inside you? Strangely enough,

it's a perfectly normal reaction that's happening at the wrong time. It's your body declaring war on outside invaders.

Usually these invaders are bacteria or viruses. When they enter your body, your immune system goes on alert. To protect you, a whole army of antibodies is produced. These chemicals travel through your blood and destroy invading germs. Part of this process also involves getting a runny nose, watery eyes and sneezing.

So far, so good. But for people with allergies, the immune system goes crazy. When they breathe in something harmless, like pollen, their bodies go on alert. And the sneezing, wheezing, nose-blowing battle begins, even though it doesn't really have to!

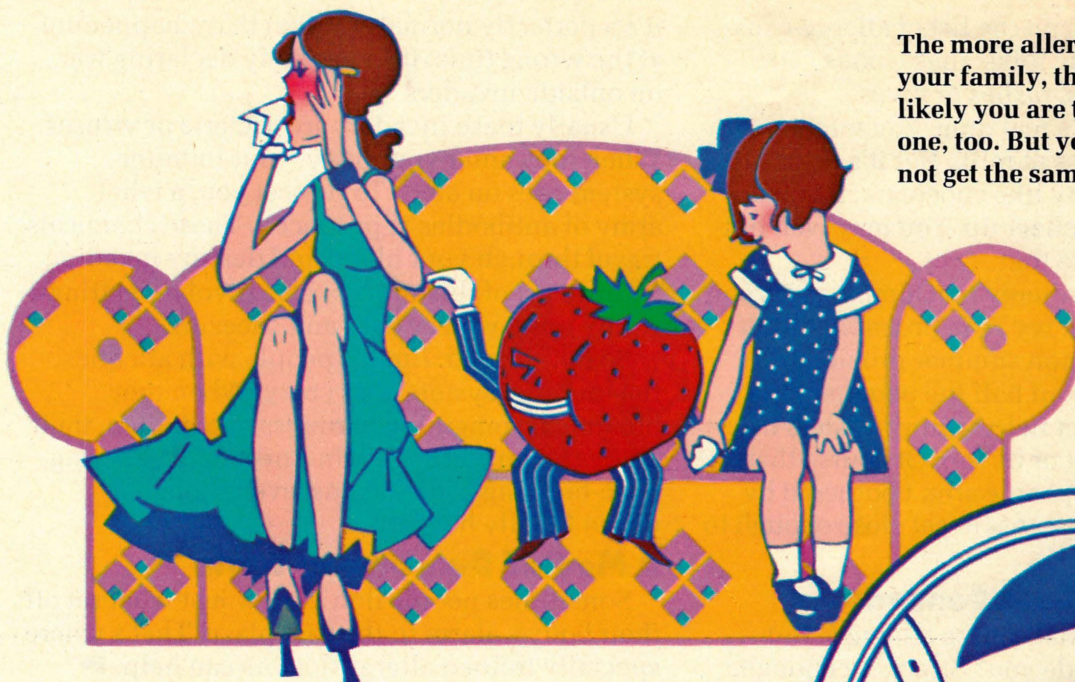
A Medical Detective at Work

Sometimes people don't know just what set off their body's alarm in the first place. That's where specially trained allergy doctors can help. ➤

The best way to fight an allergy is to stay away from whatever sets it off. If it's animal hair, you could have a bird for a pet.

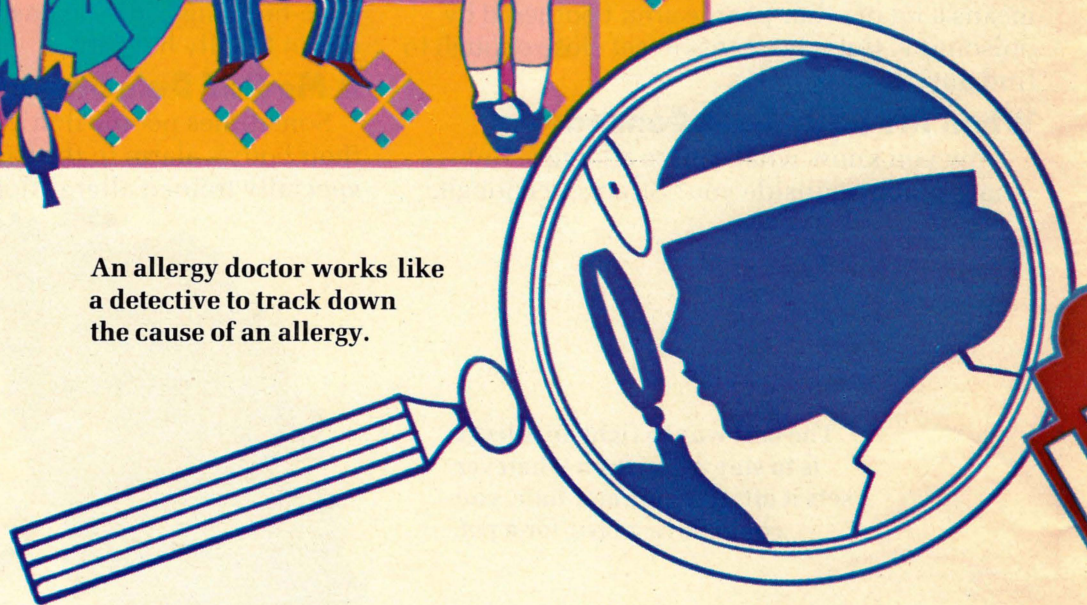


You can be allergic to things around the house that you can hardly see, like dust.



The more allergies in your family, the more likely you are to have one, too. But you may not get the same ones.

An allergy doctor works like a detective to track down the cause of an allergy.



They work like ace detectives to track down the cause of the problem. It isn't easy. Think of all the things you touch, taste, smell and breathe each day. Then imagine trying to figure out just which one had set off your body's defense alarm.

Benjamin, 11, had just that problem. One day in May, he came down with hives on his face, arms and legs. They didn't go away, either. It was time to get help from a super medical detective like Dr. Ingrid Rosner! After asking Benjamin lots of questions, the doctor narrowed down the suspects. She decided that the strawberries he had picked and the clams he had eaten were the likely causes. "Stay away from them," she advised. Dr. Rosner gave him medicine to clear up the hives.

But ten days later, Benjamin was back, as itchy and swollen as before. This time he had to bring in all the soaps, detergents and grooming products he used. "I've been using all of these for

years," he said, "except the deodorant soap that I got eight months ago."

"Aha!" said Dr. Rosner. "I think the mystery is solved." She knew that deodorant soaps often contain a certain chemical. When it gets exposed to the sun, this chemical causes allergies for some people.

Sometimes an allergy doctor has to do tests to track down the guilty party. If you have a food allergy, a doctor removes all the likely foods from your diet. Then you go back to eating these foods one at a time. So when your itching or stomach aches start again, the doctor knows which food is to blame.

An Unwelcome Gift from Your Parents

Why do some people have allergies while others don't? No one knows exactly. But like drippy noses, allergies tend to run in the family. The more allergies in your family, the more

likely you are to have one, too. You may not get the same ones, though. If your dad has hay fever, you could be allergic to dog hair, instead.

How to Fight Back

Too late to choose allergy-free parents, isn't it? Then you'll have to find another way to fight back if you get an allergy. Best of all is to stay away from whatever sets it off. If that's an animal, you could have a fish or a bird for a pet. If it's pollen or dust, an air conditioner or air filter at home might help.

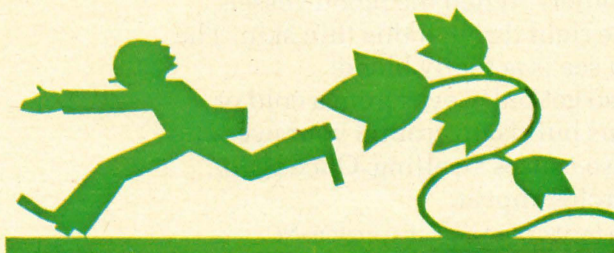
Some people just can't stay away from the stuff that makes them miserable. You might live on a farm, where there are plants and pollen all around you. What's the answer? If you've just sneezed ten times in a row, there are medicines that can help. Some of the best are called *antihistamines* (an-ti-HIS-tuh-meens). These pills or syrups begin to work in 30 to 60 minutes.

Presto—your nose isn't stuffy and drippy anymore! If these medicines don't work, there are also—ouch!—shots for some allergies.

Allergy sufferers can also look forward to some good news ahead. Today, doctors are working on improved shots. And even better, they're also working on a food allergy pill. It coats a person's stomach before meals. That might let people eat certain foods without getting an allergic reaction.

But the best cure of all may be available by the time you have kids to pass along your allergies to. By then, doctors hope to be able to fix a baby's immune system soon after birth. Then it won't go haywire fighting against harmless things.

That's great, you say. But what about today? Keep a steady supply of tissues on hand. And look on the bright side. The end of the hay fever season is just a few sneezes away!



If you get itchy blisters when you touch poison ivy, that's an allergy, too.



Your allergies can change over the years. You might outgrow an allergy. But your allergies could get worse instead of better.



From now until October is the big hay fever season. Fifteen million Americans are sneezing and wheezing from it.

Any Questions?

by Pat Berry

How do you get dark circles under your eyes?

Did you ever wake up from a restless night and find dark rings below your eyes? They are telling you something you already know. You didn't sleep well last night.

Below your eyes are hundreds of tiny blood vessels in the skin. When you are well, these vessels help drain blood from the top of your head. But when you are tired or sick, your blood circulation can slow down. This causes the blood vessels to swell up. The skin under your eyes is extremely thin. It can be even thinner on some people than others. When the blood vessels swell, you see right through this thin skin. The darkness you see is actually blood.

You can also get puffy eyes from a cold or allergy. Mucus builds up around your eyes and nose. That also causes swelling. Once again, those dark circles appear.

Question sent in by Wayne Smith, Lexington, NC.

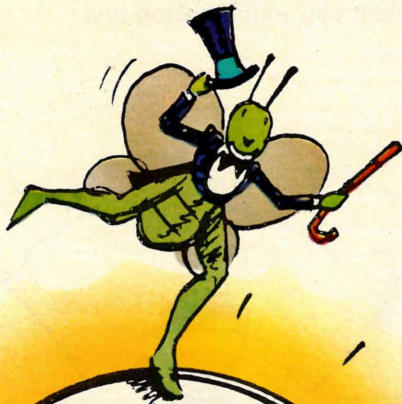


Why are moths attracted to light?

Picture a boat in a fog. When a lighthouse beam comes into view, the sailor uses the light to steer the boat. He may not know where the light is on the land. But he does know that land is near. Some people think that moths like light because it helps them navigate out of the underbrush. Most moths fly only at night. The light of the moon and stars helps them steer in the dark like the lighthouse helps the sailor in fog.

Moths have antennae which are sensitive to light. Streetlamps and spotlights create a problem. They are closer to the ground than the natural lights in the sky. A moth may "see" the light made by, say, a spotlight by your house. But rather than steer by it, the moth will probably fly right into the light by mistake. Moths aren't used to flying out of the darkness. Light confuses them, and causes them to flit around the bulb. You might say it drives them buggy!

Question sent in by Jennifer Valentino, Milan, Italy.



Do you have a question that no one seems able to answer? Why not ask us? Send your question, along with your name, address, and age, to:

Any Questions?
3-2-1 CONTACT
P.O. Box 599
Ridgefield, NJ 07657

How do smelly stickers work? Almost any smell you can think of, from pizza to peanut butter, can be captured and put on a scratch and sniff sticker. But there's more to them than meets the nose!

Take a look at a sticker. All you see is a picture of something. But hundreds of *thousands* of super small capsules are glued to that sticker. Inside each container is a little bit of fragrance. The smell may come from the actual object. Or it may be made in the laboratory using special chemicals.

When you scratch the sticker you break open some of the containers. That releases the smell. But don't scratch too hard. You only need to open a few capsules. That way your sticker will last a lot longer.

Some smells can't be captured. So far, they can't put the smell of a hamburger on a sticker. But wouldn't you rather smell the real thing...just before you bite into a double cheeseburger?

Question sent in by Trevor and Whitney Richardson.



How do they get stripes in toothpaste? Only your toothpaste knows for sure! Actually, toothpaste makers are very secretive. They don't like to talk about the special machines that put stripes in paste. But with a little investigating, you might find some of the clues at the end of your brush.

Suppose you could peel off the plastic tube around striped toothpaste. You would find a lot of chalky white paste. You would also find four colored lines of gel. They run down the outside of the paste. If you looked closely you would notice that these lines of gel were very shallow.

Toothpaste looks solid, but it is a very thick, sticky liquid. The stickiness keeps the colored gel from running together with the paste. When you squeeze a tube, white paste comes out. It pulls just enough gel along. So you see stripes on your brush. And that's the whole tooth...er, truth.

Question sent in by Heather Bloom, Pasadena, CA.



Strange Sea Creatures

LIFE ON A CORAL REEF

by Renée Skelton

Imagine an alien world of strange rocky land and odd-looking creatures. You might be thinking of a distant planet. But you need not look so far. There is a world like this under the sea. It is the world of the coral reef.

Reefs are giant underwater mounds of rock. Thousands of creatures live on and around them. Strange plants grow

from cracks. Huge coral fans and trees poke up from the ground. Sea creatures are everywhere. There are giant clams, striped and spotted fish and animals that look like fields of flowers. A coral reef is like an underwater garden filled with life. You might not get to see a reef in person. But on the next few pages you can see some of the amazing creatures that live there.

Lion Fish

This beautiful lion fish is sending out a message to other fish: stay clear of me. Those long, thin fins and spines aren't just for show. They are filled with poison. The lion fish's sting can be painful and even deadly to other fish. So when they see the lion fish's stripes, other fish get the message. They stay clear.

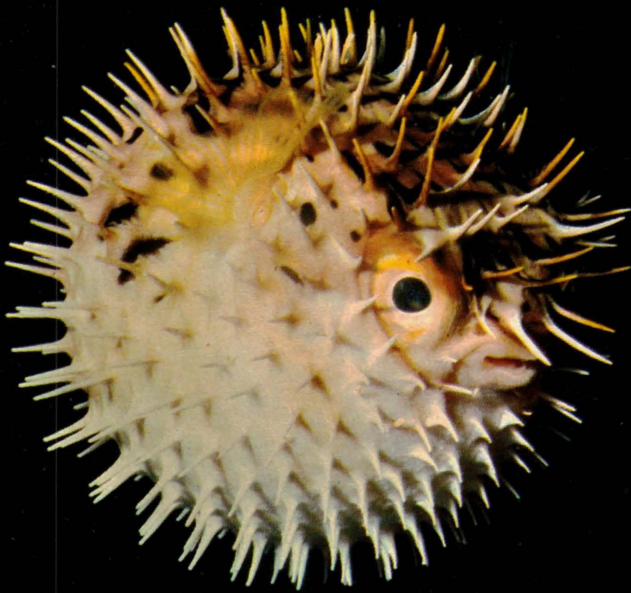
Sea Urchin

Is it a pink pin cushion? Is it a strange new flower? No, it's dinner—if you live in some parts of Japan or the South Pacific. Sea urchins are often found on the coral reef. Groups of them look like underwater fields of flowers. Some people eat the meaty insides of urchins. But most sea animals stay away. Part of the reason are those spines all around the outside. They're filled with poison!



Butterfly Fish and Wrasse

What does a fish on the coral reef do when it needs cleaning? It heads for the nearest cleaning station. These are places on the reef where fish that clean other fish hang out. One of these cleaners is the *wrasse*. Here, you see a little blue wrasse picking dirt and tiny animals off of a butterfly fish's body. But the wrasse isn't just doing a good deed. Those little animals are the wrasse's dinner. ➤



Porcupine Fish

What happens when you scare a porcupine fish? It puffs up like this! When porcupine fish get frightened they gulp in water. Then they become big, round balls. Spines on their bodies stick out like the sharp needles of a porcupine. The sight of a puffed up porcupine fish is enough to scare away other fish. It's a good thing, too. Eating one would be a real pain in the mouth.





Feather Star

Feather stars look like beautiful plants. But they are animals related to starfish. Feather stars stay hidden during the day and come out at night to look for food. This one is using its tiny feet to hold onto a rocky reef ledge. Then it can unfold its feathery arms and catch tiny plants or animals that float by in the water.

Fan Worms

A bouquet of flowers? No, more like a bunch of worms. Fan worms live in the waters of the coral reef. These worms have feathery tentacles on top. These beautiful feelers spread open for gathering food. But they serve another purpose, too. They protect the worm. Fish often take bites out of the fan worm's feathery top. But it grows back. And the worm underneath is safe from harm.

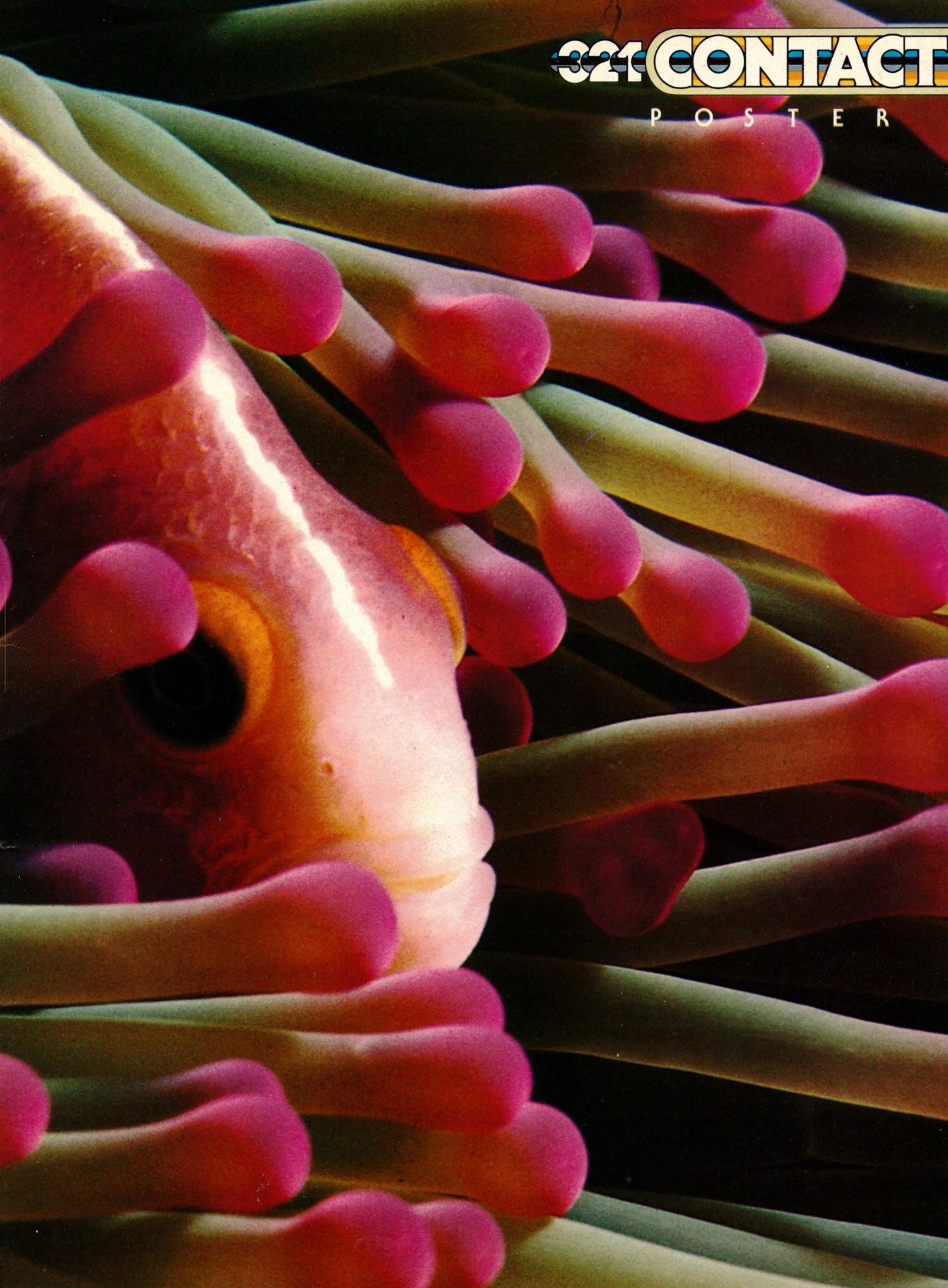


Clownfish

This fish is hiding among the tentacles of a sea anemone. The tentacles give out a poison sting and protect the clownfish from bigger fish.

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P O S T E R

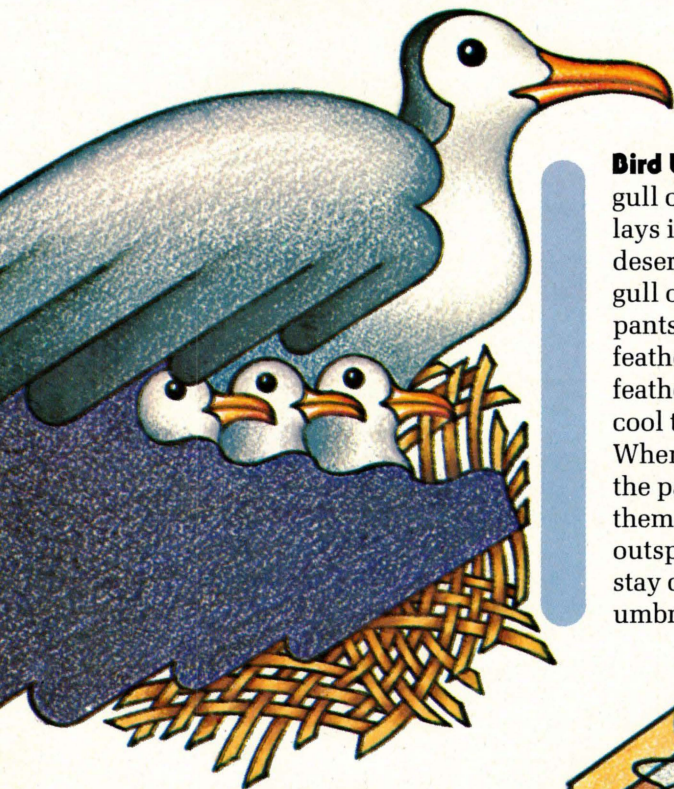


List of the Month

Beat the Heat

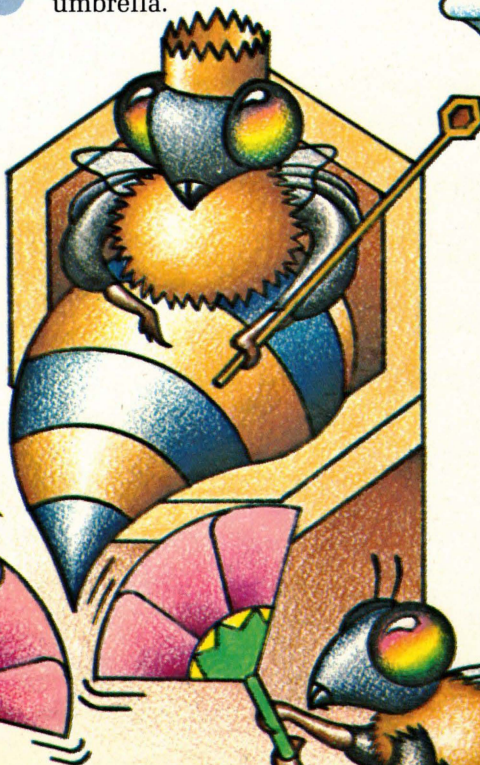
by Susan Meyers

When the days get hot, you can turn on the air conditioner. Animals can't do that but they have their own ways of beating the heat.



Bird Umbrellas The gray gull of South America lays its eggs in the hot desert. To cool off, the gull opens its mouth and pants. It also ruffles its feathers. The fluffed-up feathers let breezes in to cool the bird's body. When baby gulls hatch, the parents stand over them with wings outspread. Little birds can stay cool under a living umbrella.

Dee Breeze Honeybees keep cool by creating their own air conditioning. In hot weather, worker bees drink lots of water. Back in the hive, they spit it out. The water evaporates and cools their home. There's a hum as other worker bees beat their wings at the hive entrance. That makes water evaporate even faster. The hotter it is, the louder a hive hums.



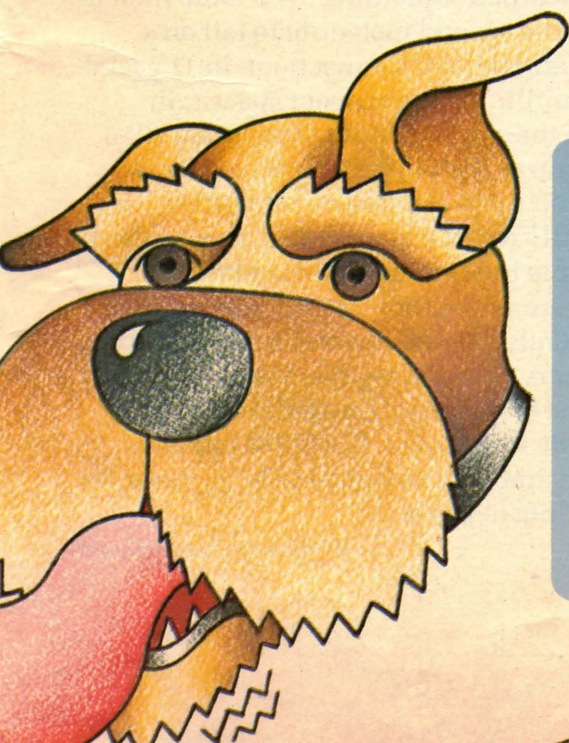
Bathing Dearies Hippopotamus means river horse, and river water and mud protect a hippo well from the hot African sun. Hippos don't usually leave the water until dusk. But sometimes they lie on the river bank. Then pores in their skin give off an oily reddish fluid called "blood sweat." This hippo suntan oil protects their skin from the sun.



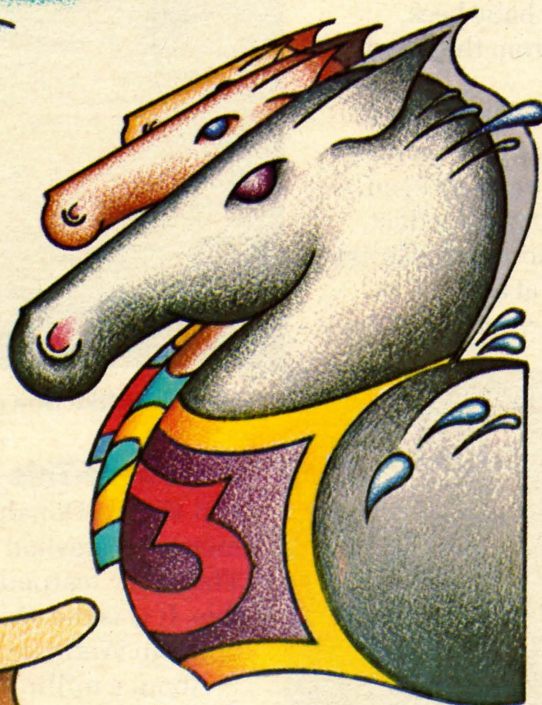
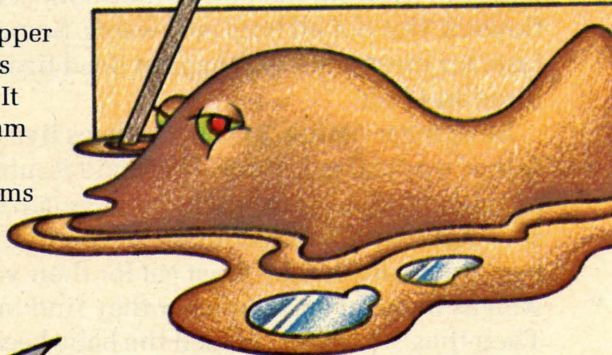
Panting Pooch Your dog's tongue is very useful. It laps up water and licks your hand. And when a dog gets hot, it lets its tongue hang out and it pants. The tongue and the inside of the mouth are wet. Panting draws the air over the wet surfaces. Moisture evaporates and—ahh—the dog feels cool again. So give your dog plenty of water to drink as the days get hot.



Ear Conditioning Dumbo used his big ears for flying. But in real life, African elephants use their ears for cooling off. Inside the ears are many blood vessels. As blood passes through, it loses heat to the outside. An elephant helps its ear conditioning along by spraying water over its ears with its trunk. In this way, an elephant can cool it even on the hottest days.

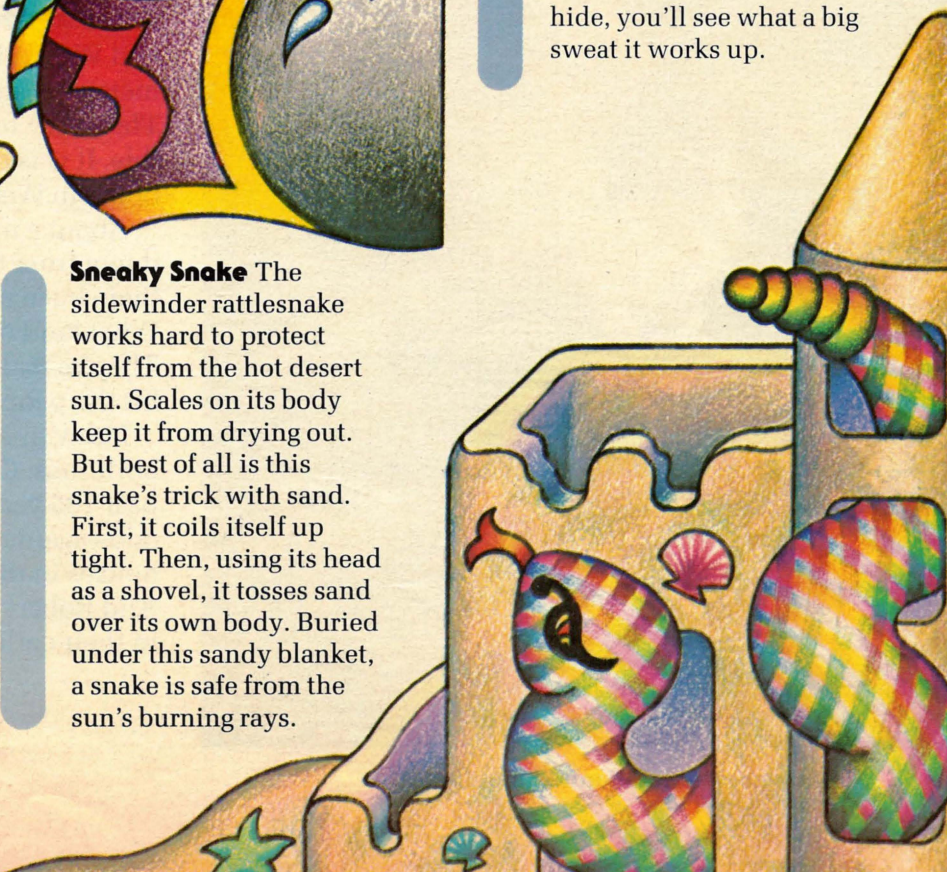


Mud Bath The African lungfish has gills like other fish. But it also has lungs. When streams dry up it burrows into the mud at the bottom. Its body gives off slime that hardens into a shell. There's a hole at the upper end for breathing air as the fish sleeps inside. It snoozes until the stream fills with water again. Then the lungfish swims out, cool and hungry!



In a Sweat Horses get very hot when they run. They sweat to cool off, just like you do. Glands in the skin produce sweat which then flows out through pores. As sweat meets the air, it evaporates and cools the horse. Look at a horse after it runs sometime. From the lather on its hide, you'll see what a big sweat it works up.

Sneaky Snake The sidewinder rattlesnake works hard to protect itself from the hot desert sun. Scales on its body keep it from drying out. But best of all is this snake's trick with sand. First, it coils itself up tight. Then, using its head as a shovel, it tosses sand over its own body. Buried under this sandy blanket, a snake is safe from the sun's burning rays.



Contact Report

How Weird Can a Bee Be? Many bees make honey to eat from the pollen they collect from flowers. But not all bees eat sweets. Some have a taste for meat instead. They eat dead lizards, birds and fish.

Most meat-eating, or *carrion*, bees live in warm, tropical countries. Dr. David Roubik recently studied some of them in Panama. He saw that they cannot store their food like honey bees do. Instead, they must eat for their young as well as themselves whenever they find food. Then they fly home. To feed the baby bees, they bring up some of the food from their own stomachs.

Wasn't David nervous while studying these tropical meat eaters? No, he knew they were not killer bees. They never bite live animals even though they have sharp, pointed jaws. In fact, carrion bees are especially safe to watch. Unlike other bees, they have no stinger at all!

—Written by Linda Lewin



Most bees like flowers. But some prefer meat.

An Out-of-This-World Experience Robert and Wanda Donahue were shocked when a meteorite crashed through their roof last fall. Then they learned something even more incredible. It was the second meteorite to fall on a home in Wethersfield, Connecticut, in 11 years!

About a million *meteors* from space rain down from the sky each hour. But nearly all of them burn up as they hit earth's atmosphere. What land on earth are called *meteorites*. They're really rare. Of course, that may be hard for the people in Wethersfield to believe.

It's even more rare for meteorites to strike buildings. Only 11 hits were recorded in the past 135 years. Experts say there were very long odds against two meteorites landing on these houses in the same town. But it did happen. And Robert and Wanda Donahue have the holes in their ceiling to prove it!

—Written by Linda Lewin



This meteorite hit a Connecticut house.

Contact Report

Rockabye Bear Bears hibernate for the winter in cozy caves, right? Not always. Many bears spend their winters sleeping in hollow trees.

"A bear will climb as high as 70 feet to hibernate in warm, dry, gently rocking comfort," says Lauren Hillman. She is a biologist who studies black bears in North Carolina. Bears make their winter dens in trees for a good reason, she finds. A bear is more protected inside a tree.

There are not enough trees available for bears, though. People cut them down to build roads and harvest timber. So bears that use the trees are starting to vanish.

Is it unbearable for these animals to share some of the southeastern woods with people? No one knows yet. So Lauren and a team of other scientists are now studying bears closely. They hope to find out more about the bears' habits. If they do, they can help the bears live happily ever after.

—Written by Joanna Foley



Scientists are studying hibernating bears.

Watching Your Watch Were you ever miles from an arcade and wished you could play your favorite video games? Soon you may be able to—on your watch. A Japanese company has invented a battery-operated wrist watch with a tiny TV screen. It's possible to plug video games right into the small television.

For now, the new watch is available only in Japan. And at \$500, it's expensive. But soon a new model will be on sale in the United States. So watch for that watch!

—Written by Chana Taubenfeld

Story suggested by John Holberg, age 12.

What's That? Have you read about a kid who invented something new? Or one who set a new science record? Then cut out the story and send it to us. If we use it, you'll get a CONTACT T-shirt. Include your name, address, T-shirt size and the name of the publication the story came from.



Soon you might watch TV on your wrist.

Write to: **The Contact Report**
P.O. Box 599
Ridgefield, NJ 07657

The Bloodhound Gang



The Case of the Puzzled Pot Hunter

Part Two

by Bill McCoy

The story so far: The Bloodhound Gang, Vikki, Ricardo and Zack, aren't looking for mysteries as they join Mr. Potter on an archeological dig. But they soon find one! They're digging on disputed land. Nora Crane of Crane Construction Company wants the land for a shopping mall. But the Compaunoag Indians, led by Charlie Tomah, claim the land is theirs. The Construction Superintendent, Nick Smoot, nearly fights with Tomah. As the dig begins, Mr. Potter makes all sorts of interesting finds. But none of them are Compaunoag relics! Later, the Gang digs secretly and finds relics *only* where Mr. Potter was supposed to dig—nowhere else. As they study their finds, a bulldozer comes roaring down the hill at them!

The bulldozer plowed down the steep hillside at top speed. Vikki, Ricardo and Zack stood frozen in a small hollow down below. They had no time to run—and no place safe to run, anyway.

"Everybody down!" Ricardo yelled. The Gang huddled on the ground as the earth-mover hit a bump in the ground—and bounced right over the hollow!

"I always wondered what the bottom of a bulldozer looked like," Zack said as they stood up.

They watched as the big machine rumbled along. Several yards away, it smashed through a tree-trunk. But the dozer didn't stop there. It crunched through Mr. Potter's historical dig.

"Mr. Potter's work is all ruined," Zack said as they scrambled down. "What a terrible accident!"

"Accident?" Vikki watched the rumbling machine. "This didn't turn itself on." Suddenly, the engine died. She climbed aboard. "No key. Gas reads 'empty.' It had just gas enough to start ...to make this *look* like an accident—a machine that rolled down a hill. But we saw it running. Somebody sent it down. Let's look for clues."

Everybody a Suspect

"Who would do that?" Zack asked as they searched.

"Who wouldn't?" Ricardo said. "Nick Smoot didn't want the dig—he said it would slow up his work."

"And he can start a bulldozer without a key," Zack put in. "He did it yesterday by sticking two nails in the slot and twisting them with a screwdriver." He picked something up. "And let's not forget Charlie Tomah. As a former construction worker, he might know that trick, too." Zack held up his find—a piece of yellow plastic. "What's this?"

The bulldozer's patch was littered with red and yellow chunks of thin plastic. "Looks like something got stuck in the treads," Ricardo said.

"Stuck—like us. We have two people with good reasons to destroy the dig. But who would plant arrowheads on it?" Vikki said. "Mr. Potter?"

"You're kidding!" Ricardo said.

"It's his one crack at a big discovery. Then he heard real archeologists were coming. Now the site is destroyed."

Vikki headed up the hill. "Let's take our finds to a professional archeologist. Professor Hopkins is a friend of Mr. Bloodhound's."

The next day, their clues rested under a bright light in the professor's study. "The stone spear point is 10,000 years old," Professor Hopkins said. "But this horseman carving from plains Indians is less than 100 years old." He turned the carved antler in his hand. "I've seen this somewhere before. Excuse me, please." He came back with a book. Its cover read, "Catalog of the Carlson Collection."

"Here." Professor Hopkins pointed at a picture showing the antler. "It's the same, isn't it?"

"Yes," Vikki said. "Where is this collection?"

"It was stolen recently from Mr. Carlson's mansion up in White Ridge," the professor said.

"Who mentioned that town yesterday?"

Vikki's head snapped up. "Nick Smoot! He and Nora Crane did some work there. One of them could have stolen those relics and planted them here. Now how can we figure out which one might have done it?"

"Let's look for fingerprints," said Zack.

"Good idea," said Vikki. "Then we'll see if

any of them from the relics match the prints on our hard hats." She toyed with the yellow plastic in her bag of clues. "Hmm, hard hats..."

Who Stole the Relics?

Next day was the ground-breaking ceremony for Riverside Mall. Everyone was there—the mayor, reporters, Nora Crane, Nick Smoot and a group of Indians led by Charlie Tomah. Also in the crowd was the Bloodhound Gang. Vikki carried a shoebox.

The mayor ended his speech. "Here now is the wonderful person responsible for this operation, Ms. Nora Crane." Today, Nora wore a suit, high heels and a shiny new hard hat.

"Thank you, Mr. Mayor. We feel quite proud of what we've done so far. But we're disappointed an accident wiped out Mr. Potter's fine archeological work. The traces he dug up seemed to show that a tribe other than the Compaunoags lived on this land."

Tomah and the Indians shouted angrily. Then Vikki's voice cut through the noise. "Ms. Crane, I'd like to ask you about those traces."

From the shoebox, she pulled the three relics the Gang had found. "Late last night at the dig, we found these things—right where Mr. Potter would be digging. Then I dug farther away, but found nothing."

"Young lady, Mr. Potter made a careful plan. Don't be surprised that you found nothing if you didn't follow his plan."

Vikki cut her off. "Mr. Potter, you've already said that you didn't recognize any of these remains as Compaunoag remains."

Mr. Potter nodded. "That's right."

"I took the clues I found to a professional archeologist. Professor Hopkins said you didn't recognize them because they never came from here."

Everyone stared at her in surprise. Nora Crane spoke up quickly. "Nonsense. If they don't come from here, how did Mr. Potter dig them up?"

"Somebody put them there," Vikki said. "I saw pictures of these relics in a museum catalog of the Carlson Collection. A few months ago, it was stolen...from the Carlson mansion in White Ridge."

"Y'know, we were in White Ridge a while ➤

ago —working on a building..." Smoot said.

"Lots of people work in White Ridge," Nora Crane snapped. "Anyone could have stolen that collection."

"You're right," Vikki nodded. "That's why we tested them for fingerprints. We were lucky. Remember that argument just before the dig started? Ms. Crane handled Zack's hard hat. Nick Smoot handled mine. Mr. Potter and Mr. Tomah touched Ricardo's hat. So we had lots of prints to check."

A Hard Hat Tells the Tale

"And how do you think it turned out? We found our own prints, of course. We also found Professor Hopkins' fingerprints. But there was another set of prints on these relics. And they exactly matched the prints on Zack's hard hat—the hard hat that you put on his head."

Nora Crane's face went white. "Next, you'll accuse me of pushing the bulldozer down the hill."

Vikki shook her head. "It was very sad that Mr. Potter made his discovery on a slow news day. You expected a little publicity—probably just enough to shoot down the Compaunoags' claim to the land. Instead, there was front-page news. Professional archeologists wanted to look at the site. You couldn't allow that. So, last night, you sneaked back and turned on one of your bulldozers..."

"Whaaat?" Nora Crane's voice went high.

"Ms. Crane, we heard you do it. We were standing in the hollow at the bottom of the hill."

Nora Crane was blinking. "I didn't see...I mean..." She clamped her mouth shut.

"I hope you didn't see us," Vikki said. "The bulldozer almost ran us over."

"I was never near a bulldozer!" Nora burst out.

"Then explain these. We found them all along the bulldozer tracks as they went over the hill." From her shoebox, Vikki pulled out pieces of red and yellow plastic. She fit them together to make up a hard hat with a big red number one.

"Last time we saw this, it was on your head. Why are you wearing a new hat today?" Nora Crane stared at the pieces. The television camera zoomed in on her and reporters frantically scribbled. The Indians cheered. She turned to

the mayor. "I'm calling my lawyer." Then she walked away.

Moments later, no one was left at the groundbreaking ceremony but the Gang and Mr. Potter. Vikki's evidence was with the police. Mr. Potter stood looking at the bulldozer in his dig.

Vikki went over to him. "I'm sorry, Mr. Potter. But I couldn't let her get away with it."

"She used me," Mr. Potter said. "She needed someone who knew about the Compaunoags, and no one else." He kicked at a rock. "I really am only a pothunter. Any real archeologist would see through that. How could I be so blind?"

Suddenly, something caught his eye. "Look down at that hole the bulldozer made," he said.

"Looks like a big stain in the dirt," Zack said.

"There are rocks around that spot," Mr. Potter said excitedly. "That's a hearth site—Indians had their campfires down there. It's a real site after all!" He rushed down for a better look.

"He called himself blind?" Vikki said. "I couldn't see any of that stuff."

"Call the State University! This will be a job for professionals!" Mr. Potter yelled to them.

Vikki shrugged. "I was going to call this the Case of the Puzzled Pot Hunter. Maybe it should be The Case of the Happy Pot Hunter, instead."

Next month begins a brand new adventure, introducing a new member of the Bloodhound Gang.





chocolate challenge

A CONTACT QUIZ

by Rebecca Herman

Now that you've read this month's chocolate factory story, you're an expert, right? Well, maybe. This chocolate quiz will give you something to chew on. Dig in!

1. In some parts of the world, people eat bread-and-chocolate sandwiches.

True or False?

2. Eating chocolate gives you pimples.

True or False?

3. Chocolate was once used as money.

True or False?

4. Chocolate and suntan lotion both contain the same ingredient.

True or False?

5. Chocolate-flavored syrup is made of 100 percent real chocolate.

True or False?

6. A dusty white coating on a chocolate bar means it's spoiled.

True or False?

7. Most chocolate contains salt.

True or False?

8. The only difference between white chocolate and regular chocolate is the color.

True or False?

Answers on the next page.

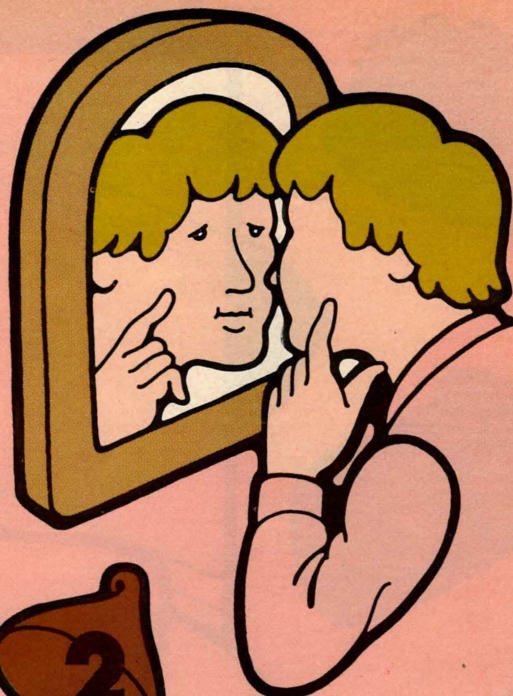
QUIZ ANSWERS



True You might think that the only things that chocolate belongs in are chocolate chip cookies and M&M's.

But in some parts of Europe, people think chocolate is the perfect sandwich filler.

Pretty unusual, you say? Well, how about chocolate chicken? A favorite dish in Mexico is mole (MO-lay). It's chicken in a sauce with cocoa. And for dessert? Try some chocolate covered ants. In Africa and South America, people sometimes eat roasted ants as a special treat. And in some special food stores in the U.S. you can get the little pests dipped in chocolate. Maybe you would rather stick to chocolate covered peanuts!



False For a long time,

it was thought that eating any fatty foods, including chocolate, would give you pimples. But in the past few years, people have found out that eating chocolate probably has nothing to do with getting acne.

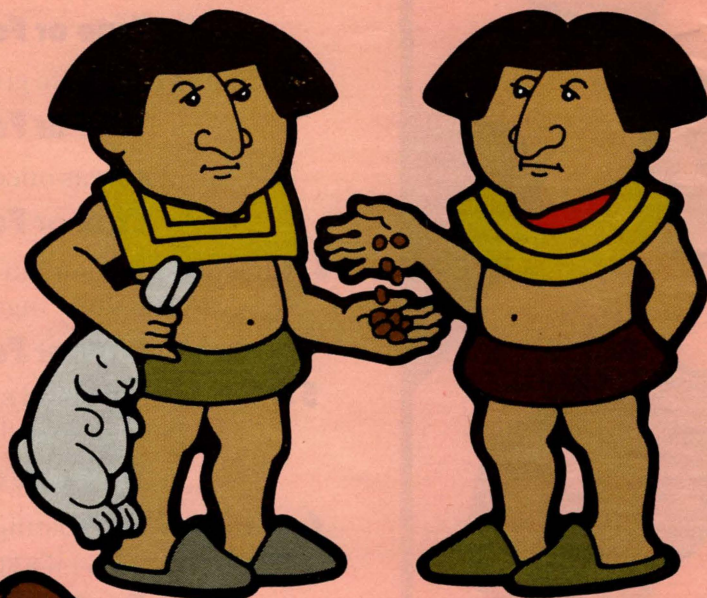
Hold on, though! Don't go and pig out on junk food. No one's really sure what other problems chocolate can cause. But if you tend to get cavities or be extra-active, you should probably steer clear of the candy. The sugar in it might cause cavities or make you more jumpy. Too much of a good thing can be no good!



True When the Spanish explorer Cortez visited Mexico in 1519, he became one of the first people from Europe to taste chocolate. He wasn't too impressed by the chocolatey liquid he

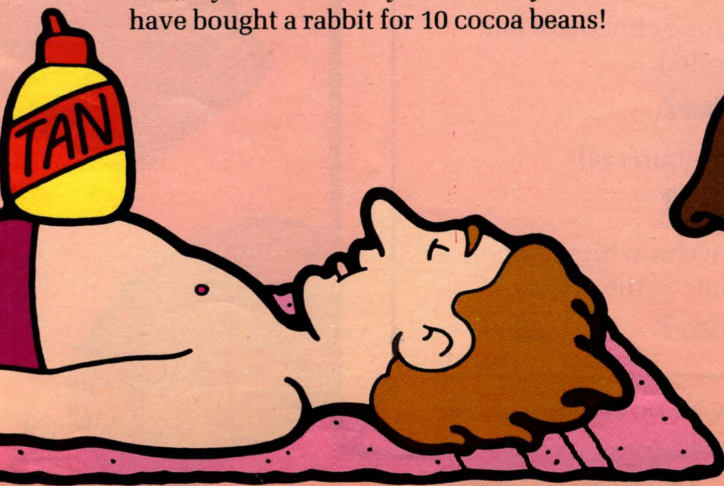
was served. Cortez thought it was more interesting that cocoa beans were used as money.

The Aztec and Mayan Indians used cocoa beans the way you use coins and dollar bills. In fact, if you were a Mayan Indian, you could have bought a rabbit for 10 cocoa beans!



True You might not have thought that chocolate and suntan lotion have too much in common. But if you read the ingredients on their labels, you'll see that they both usually contain cocoa butter.

Cocoa butter is the fat from the cocoa bean. Without cocoa butter, chocolate would be hard and wouldn't melt easily in your mouth. Cocoa butter gives chocolate and suntan lotion their creaminess.

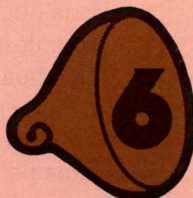




False Even though the syrup you pour in your milk looks and tastes like chocolate, it probably isn't. If a label says "chocolate flavor," you know you're not getting the same kind of chocolate that's in a chocolate bar.

In order to officially be called just *chocolate*, a product must have a certain amount of chocolate liquor and cocoa butter. Often things like syrup, ice cream and chips don't have any or enough of those two ingredients to be considered pure chocolate.

Instead, they may have cocoa or artificial flavors, as well as a whole lot of other things. That difference is what adds the word *flavor* to the label. What's in your syrup? Check the label and see for yourself.

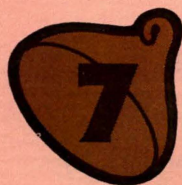


False When you peel off a chocolate wrapper, you expect to see a dark, shiny

bar. But sometimes there are cloudy spots on the candy.

The whitish patches mean that the chocolate has gone through a few temperature changes. It's probably been in a very hot place and then a cool place a number of times. The change in temperature makes the cocoa butter rise to the surface. That's what you see as dull, white spots.

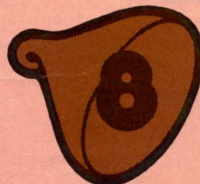
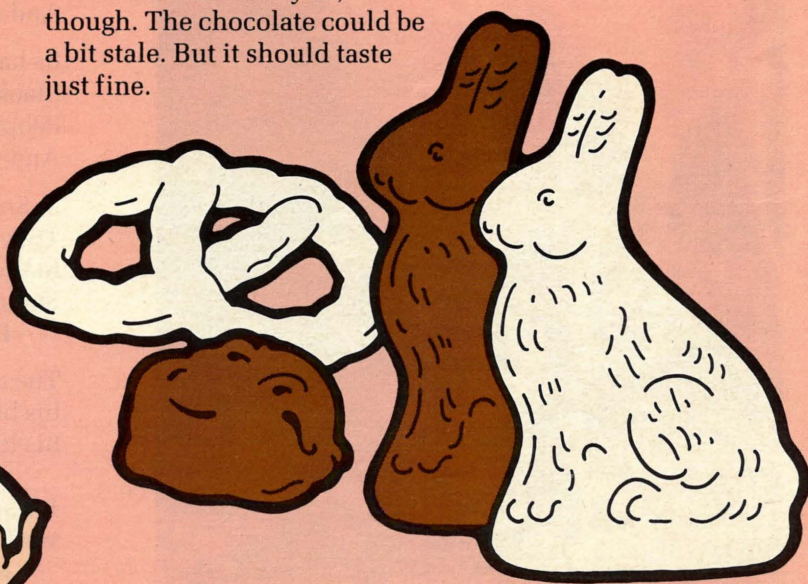
Don't let it bother you, though. The chocolate could be a bit stale. But it should taste just fine.



True No kidding. You won't always find salt listed on a chocolate bar label. But it's probably in the candy in one form or another.

The people who make chocolate sometimes add salt to it. The salt brings out the chocolate flavor. Salt doesn't have to be added, though, to be found in your chocolate.

In nature, salt is found in some ingredients that go into chocolate. So even if salt isn't listed on the label, it could be hidden in your sweet snack.



False In fact, strictly speaking, white chocolate isn't chocolate at all! White chocolate doesn't have any chocolate liquor. The only part of the cocoa bean that's in white chocolate is cocoa butter. To make white chocolate, milk and sugar are added to the fatty stuff. It's a creamy treat. But chocolate? Not really!

Poetry Winners

Remember a few issues back when we gave you clues and asked you to describe an alpaca in a poem? Here are the winners of that contest:



I know of an animal I'll tell you about.
He is not too tall and is very stout.
His colors blend well, all black, brown and white.
You should see him, it's a beautiful sight.
His long shaggy fleece keeps him warm,
Whenever there's a hard winter storm.
Some people kill him for the meat
So they will have something to eat.
A couple of his relatives are also mammals.
They are the llamas and the camels.
The place where he lives is in Peru.
There are not many found in Peru.
I bet you haven't guessed yet, right?
If you did, it must have took you all night.
So I guess I'll tell ya,
It's the alpaca!

Shilo Trioiano and Erica Arles, Flanders, NJ

The wooly, soft alpaca
Has very shaggy hair,
That grows down over his eyes
And drags most everywhere.

Its hair can actually be
Black or white or brown.
People make clothing out of it.
And wear them into town.

In South America you find them,
They graze in flocks, you see;
In the Andes mountains,
Standing in the breeze.

Laura Ball, Grand Junction, CO

The alpaca, standing in a clearing of time
his black, flowing fur waving in the breeze
his long neck reaching over the high, snow-
covered peaks

his sparkling eyes peering at the sunset
waiting for the night to approach

Marty Quinn, Rahway, NJ



The alpaca spits,
When it sits.
It is smaller than the llama,
And won't go crying for its mama.
It lives in the Andes,
Will it eat candies?
No, they graze on high plateaus,
While looking at their toes.
Its scientific name is Lama Pacos.
Well then I think they'd eat tacos.
It has long soft wool
That you should not pull.
It's a mammal,
And related to the camel.

Julie Jurgens, Beaver Dam, WI

Llamas and camels are your sister and brother.
Your silky twenty inch hair is the pride of
your mother.

South American Andes is where you call home.
Grazing on grass wherever you roam.

Your four foot body is long and low.
Your neck stretches up and continues to grow.

I'm sorry they shave you and you have to freeze,
While I wear your coat, in each winter breeze.

Michele Cavin, Grant City, MO

An alpaca was out looking for grass,
when along came a

Llama who wanted to pass.

"Pooh! Go away! You cannot pass." "Have it your
way, but I think you might care that
Although you have fur that is black, brown, and
white, I've a fierce

Camel who's ready to fight!"

And so the poor fellow let the llama go by, but
Saw no fierce camel and started to cry.

Alice Bers, Hamden, CT

Alpaca! Alpaca! Where do you roam?
Way down in the Andes—far from my home.
You look like a sheep and a camel, too.
I wish you lived closer so I could see you.
In Oklahoma we could teach you quite a bit.
We'd teach you some manners—NOT TO SPIT!
We'd make you clean-cut and cut your long hair,
We'd take care of you because we know you are rare!
So if you ever get lonely and want your flock to stray,
Lead them straight north to our good U.S.A.!

Tricia Thornburgh, Helena, OK

Contest Winners

Last year we asked you to fill out a question-
naire. We said we'd pick ten names at random
and send them CONTACT T-shirts. Here are the
lucky winners:

Holly Cravens, Moriarty, NM

Mary Katherine Hlad, Syracuse, NY

Jennifer Leigh Johnston, Rhoadsville, VA

Rebecca Kirisits, Perth, Western Australia

Wendy Jo Losee, San Diego, CA

Wendy Miller, Boaz, AL

Jonathan E. Mollenhauer, Glassboro, NJ

Demien Jason Ravin, Manitou Springs, CO

Monica Rossos, Toronto, Ontario, Canada

Dana Stanley, Old Town, ME

We Want Mail!

Dear Readers,

We really love hearing from you. The questions,
ideas and complaints we get help us make
CONTACT a better magazine. So why not drop us a
line? We can't answer every single letter, but we do
read them all. Send your mail to:

3-2-1 CONTACT: Letters

P.O. Box 599

Ridgefield, NJ 07657





Want more information on some of the things in this CONTACT? Or just something to do and see for fun? Keep reading!



Ah-CHOO!

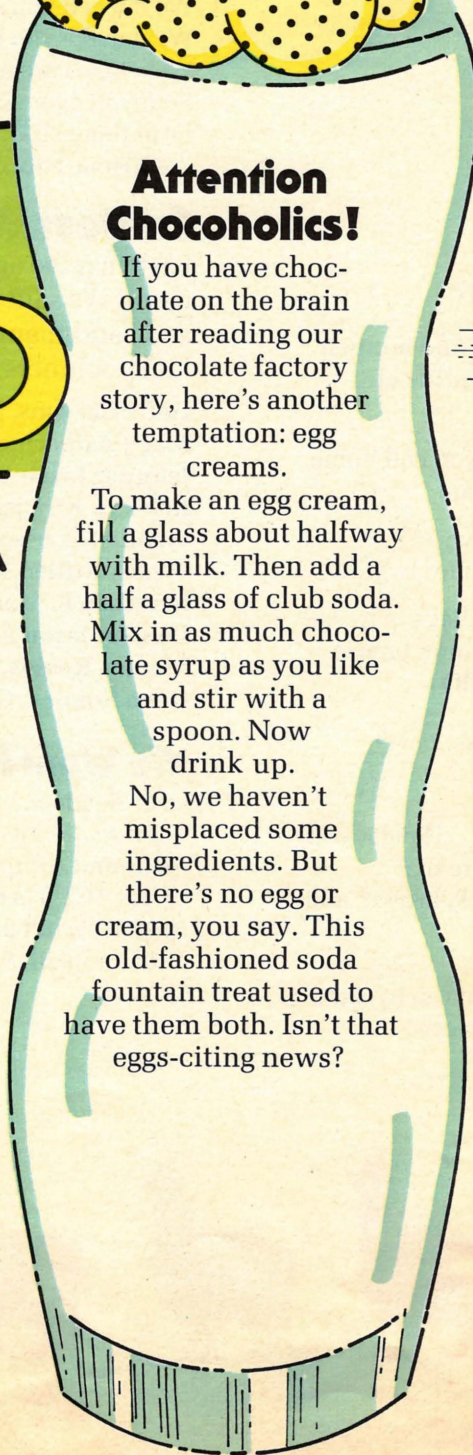
Gesundheit! If you think you have an allergy, you might want to read the booklet "Questions and Answers About Asthma and Allergic Diseases." It is put out by the Allergy Foundation of America. It tells you what causes some allergies and what to do if you think you have one. Send your request for a free booklet to:
The Allergy Foundation of America
 9604 Wisconsin Ave.
 Bethesda, MD 20014

Attention Chocoholics!

If you have chocolate on the brain after reading our chocolate factory story, here's another temptation: egg creams.

To make an egg cream, fill a glass about halfway with milk. Then add a half a glass of club soda. Mix in as much chocolate syrup as you like and stir with a spoon. Now drink up.

No, we haven't misplaced some ingredients. But there's no egg or cream, you say. This old-fashioned soda fountain treat used to have them both. Isn't that eggs-citing news?



How's It Made?

Did you enjoy going behind the scenes at the chocolate factory? If you'd like the inside story on some other things, check out these books at the library or a bookstore.

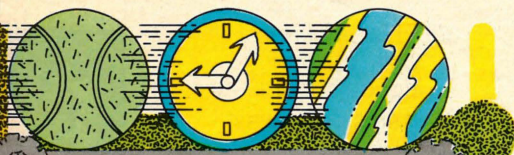


The Bakery Factory In this book by Aylette Jenness, you'll see how thousands of loaves of steaming hot bread and scrumptious pans of cupcakes and pastries are baked each day. This visit to a very special factory is published by Thomas Y. Crowell.



Blue Jeans You probably have a pair of blue jeans in your closet. But did you know it took hundreds of people, from cotton farmers to weavers to designers to truck drivers, to put them there? Jonathan Rosenbloom shows you how your jeans are made in this book published by Julian Messner.

Previews



How Things Are Made

This book is full of color photos that give you the inside scoop on how lots of things are made. You'll see how a baseball is put together. You'll visit a factory that makes licorice. There's a look at how marbles are made from recycled glass, and much more. This book is published by National Geographic.

Minnesota Museum

This review was sent in by
Diana Bieber of Lancaster, PA.

I went to the Science Museum. I liked the Electronic Floor best. One exhibit demonstrated the use of parabolas or whisper bowls, as they called them. One person would whisper into the center of the dome-shaped parabola to a friend across the room. The sound waves bounce off the parabola and across the room to your friend.

There's another exhibit in which, by moving an electronic hand, you cause a simi-

lar hand inside the glass to build a tower of blocks. I enjoyed the Science Museum. Maybe some time you can visit it.

3-2-1 Contest

Now that you're up-to-date on coral reefs, why not try a little imaginary undersea exploring of your own. Draw a creature that lives by a coral reef and send it to us. Oops, we almost forgot to tell you. This creature must have the following features:

- * A long nose
- * Stripes of some kind
- * Something pointy

If we use your drawing, you'll get a T-shirt. So send your shirt size and reef creature, along with your name and address, to:

3-2-1 Contest: Reef Creature
P.O. Box 599
Ridgefield, NJ 07657



Hot on the Scent!

Here's a scent-sational activity to take the drudgery out of bath time. Like the scratch and sniff stickers in *Any Questions?*, it's a way to capture pleasing smells.

You'll need a cotton handkerchief and some or all of the following great-smelling things:

- green pine cones
- lemon or orange peels
- flower petals

Put the things in your handkerchief. Tie the corners together with a long piece of string. Tie the other end of the string to your bathtub faucet.

Now let the bundle dangle in the hot bath water. Smell how the water soaks up the fresh outdoor smells? Close your eyes and you'll swear you're taking a bath in the middle of a forest!

Crossword Puzzle

Some of the answers to the clues can be found in this month's issue.

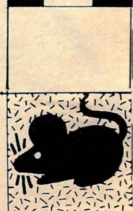
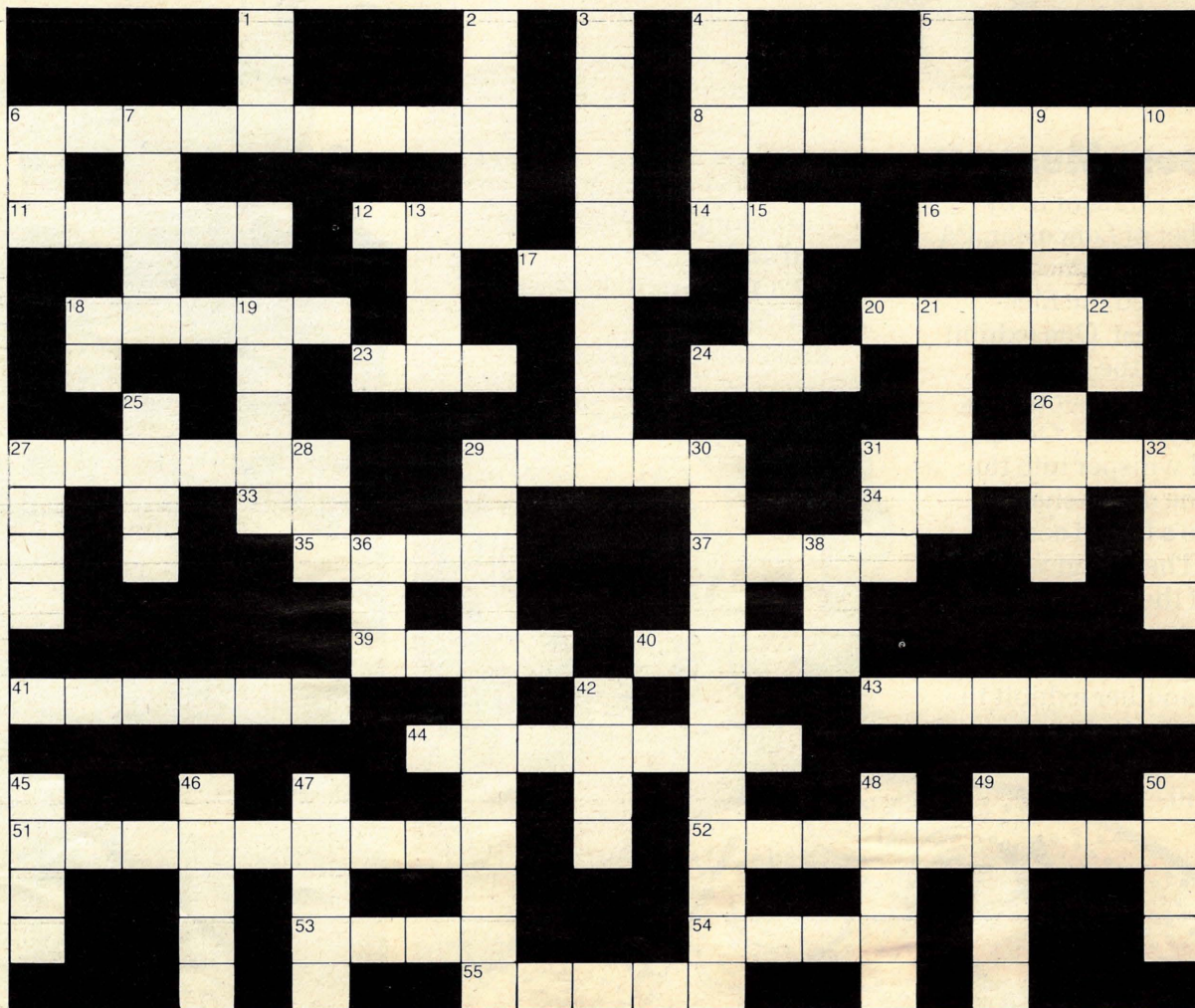
Don't be cross if you can't find a word! Keep looking! **Answers on page 37.**

Across

6. Made in Hershey, Pennsylvania
8. It almost smashed the Bloodhounds flat
11. You have one when you sleep
12. Row with it
14. Consume food
16. Your funny bone is near it
17. In the monkey family
18. After-school meal
20. Spotless
23. Canine
24. Dust from a volcano
27. A Compaunoag is one
29. Stairs
31. Ah-choo!
33. Short for mother
34. We
35. Couple
37. Mid-day
39. Flying insect that likes light
40. Bounce it
41. Mouse or rat
43. Come back
44. Dig with them
51. A shaking
52. Dial a friend
53. Green thing at end of a branch
54. Not under
55. Sad face
3. Striped soap for your choppers
4. Eat at it
5. Sleep in it
6. Kind of fish
7. Atlantic or Pacific
9. Black and white mammal
10. Not cooked
13. Too
15. Insects at a picnic
18. Therefore
19. A cool dessert: ice _____
21. African mammals that roar
22. Not yes
25. Stinky smell
26. Underwater mound of coral
27. Makes you scratch
28. Short sleep
29. Smelly stickers: _____ and _____
30. This and chocolate contain cocoa butter
31. It sets in the west
32. Simple
36. Your hand is attached to it
38. A hooting night bird
42. Bake in it
45. Sort of round
46. Courageous
47. Old bread is this
48. Listens
49. _____ blind mice
50. _____ a story

Down

1. Also
2. Drive a car



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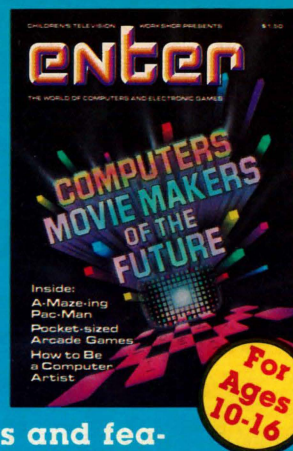
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8SAB3

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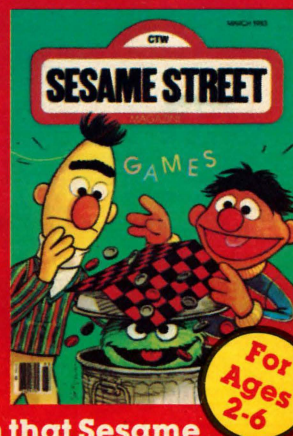
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Earthfacts: Coral Reefs

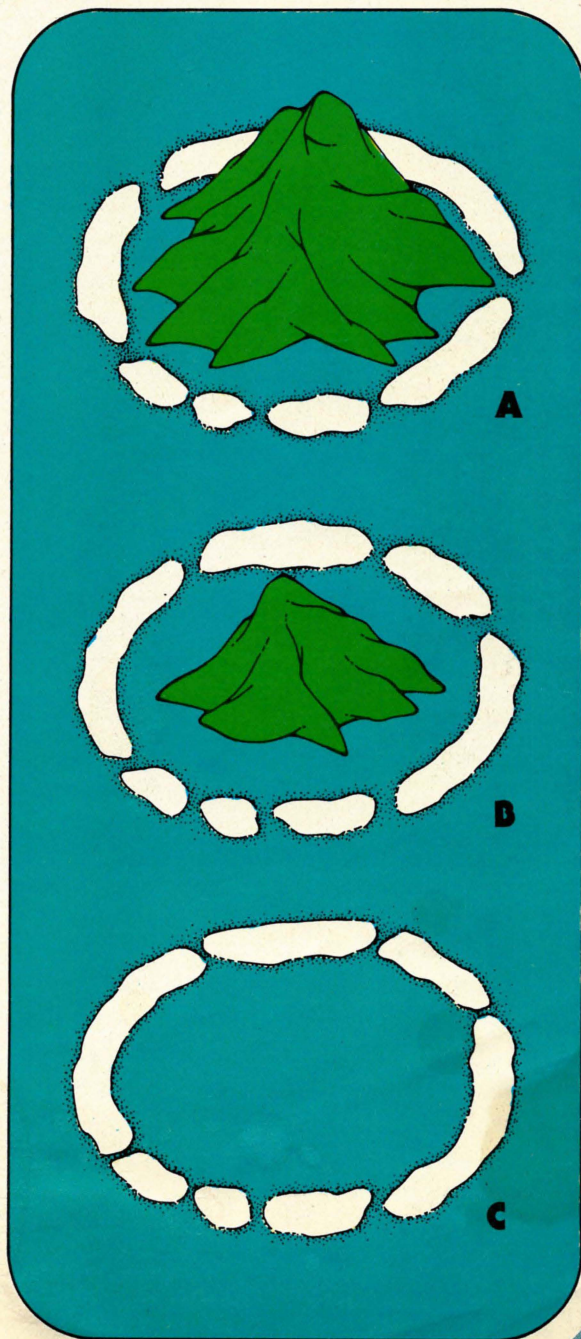
by Judy Gordon

Each month CONTACT will bring you another *Earth Works*. Save these pages in a notebook. Soon you will have your own guide to the wonders of the planet Earth.

EarthWorks

- ☉ Coral reefs are rocky mounds that form under the sea. They are made from the skeletons of billions of tiny animals called corals.
- ☉ Corals don't have skeletons inside their bodies like you. The corals' hard, limestone skeletons are outside. The animals live inside. The corals grow one on top of the other. At the bottom of the reef are dead corals. But the ones on the edges are alive. They live about 50 years. Then they die and more living corals grow on top. So the reef keeps growing.
- ☉ Most reef-building corals are no bigger than one of your fingers. Over long periods of time these tiny animals can build up really huge reefs.
- ☉ Not all corals are small though. The gorgonian coral can grow taller than you. It looks like a giant fan standing 10-16 feet (3-5 m) tall.
- ☉ The largest coral reef is the Great Barrier Reef, near Australia. It's 1,250 miles (2,011 km) long. That's long enough to stretch almost halfway across the United States. The reef is so wide (95 miles, 150 km) that you could walk for hours and not get across. So how did tiny corals make such a big reef? Very slowly. It took millions of years for the Great Barrier Reef to form.
- ☉ Coral reefs aren't just barren rocks in the sea. Thousands of creatures live in and around them. When these animals and plants die their shells and remains become part of the reef.
- ☉ Corals come in many shapes and colors. Some look like flowers, feathers or fans. Others resemble brains, mushrooms or animal horns!
- ☉ If you live in the northern United States, don't look for coral reefs nearby. They only grow in oceans that are warm all year round.
- ☉ Some underwater animals like the crown-of-thorns starfish damage reefs by eating live corals. Many reefs already have been destroyed.
- ☉ People also damage reefs. Polluted water kills corals. Divers break off pieces for souvenirs. Destruction of a reef often means the disappearance of animals that use it as home.

Below: Some reefs stick up above the surface of the water. (A) *Fringing reefs* form close to land. (B) *Barrier reefs* form along coasts, but farther from shore. (C) *Atolls* are rings of coral with no land in the middle.





EarthWorks

Coral Reefs

This may look like a bunch of fish swimming around an underwater tree. But that so-called "tree" is made of thousands of living animals. The animals are corals. They are part of a coral reef.

Reefs are huge underwater structures that build up over time. The largest ones can build for millions of years. They may be thousands of miles long. Some even stick out of the water as islands.

Reefs are full of life. Strange fish and other creatures live in and around them.

For more on coral reefs, turn to page 39.

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